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# Validation of the Name *Adiantum meishanianum* (Pteridaceae), a Species Endemic to Taiwan

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**ABSTRACT.** While investigating the fern called *Adiantum meishanianum* F. S. Hsu ex Y. C. Liu & W. L. Chiou (Pteridaceae), it was discovered that the name was not validly published because it had not appeared in an effectively published work. The name is validated herein; the holotype is deposited in HAST, and there are paratypes in TAIF, HAST, and SYSU.

**Key words:** *Adiantum*, IUCN Red List, Pteridaceae, Taiwan.

The name *Adiantum meishanianum* has not hitherto been validly published. The fern bearing this designation was first collected from Taiwan by Bi-Jao Wang on 30 October 1983 (*B. J. Wang 3025*, HAST) and "*Adiantum meishanianum*" was handwritten by Chen-Meng Kuo on the sheet without further validation. Later, Fei-Shuang Hsu collected plants of the same species in the same area of Meishan Village (Meishankou, type in sched., *Wang 3025*), Kaohsiung County, Taiwan, and treated them as a new species in his master's thesis (Hsu, 1993). Unfortunately, the publication of the name *Adiantum meishanianum* F. S. Hsu was not effective under Article 30.5 of the *International Code of Botanical Nomenclature* (McNeill et al., 2006), because a name published in a thesis submitted to a university for the purpose of obtaining a degree is not considered an effective publication after 1 January 1953.

Moreover, even though Hsu's thesis provided the designation and image of the holotype, it lacked information on the designated herbarium or institute that contained the holotype specimen, which is contrary to the requirement of Article 37.6 for names published after 1 January 1990 (McNeill et al., 2006). As a result, the requirements for valid publication of the name were not met.

The present paper validates the name *Adiantum meishanianum* and designates a type specimen. As noted, the diagnosis provided by Hsu (1993) was never effectively published and is brief and in some parts erroneous. Therefore, we re-describe and present a full diagnosis and description of *A. meishanianum* herein.

***Adiantum meishanianum*** F. S. Hsu ex Y. C. Liu & W. L. Chiou, sp. nov. TYPE: Taiwan. Kaohsiung, Meishankou, 30 Oct. 1983, *B. J. Wang 3025* (holotype, HAST). Figure 1.

Species nova ab *Adianto caudato* L. pinnarum paris imo stipite longiore (3–5 mm longo) atque frondis stipite longiore (ca. 10–20 cm longo) differt.

Rhizome short, erect to suberect, apex covered with scales; scales linear, to 4 mm, entire, bicolorous with a black center and brown margins; stipes ca. 10–20 cm, castaneous to blackish purple, lustrous, glabrous or sparsely hairy with multicellular hairs; scales on stipe like those on rhizome but concolorous brown. Lamina linear to lanceolate, pinnate, 10–50 × 3–6 cm; rachis sparsely hairy or glabrous, long attenuate at apex, leafless on distal part, and rooting at apex, occasionally secondarily prolonged; lateral pinnae largest at lamina base, lowermost pair of pinnae reflexed, distinctly stalked; stalks usually 3–5 mm, with ca. 60°–90° angle to rachis; pinnae numerous, 5 to 20 pairs, mostly dimidiate, usually 2–3 × 1–1.5 cm, rounded at apex, lower margin straight, softly herbaceous, glabrous on both surfaces; outer edge of pinnae subentire, crisped or lobed to about 1/3 of breadth of pinnae, sinuses narrow, lobes rounded to quadrangular, rounded to truncate at subentire or toothed apex. Sori at margin of pinnae, 5 to 16 per pinna, reflexed flaps 2–3 mm wide, glabrous.

**Habitat, distribution, and IUCN Red List category.** *Adiantum meishanianum* is an endemic species found growing on the edge of secondary forest. There is only one known population in Meishan Village (Meishankou), Kaohsiung, Taiwan. The area of distribution was approximately 40 × 20 m<sup>2</sup> and contained a population of less than 100 plants. According to IUCN Red List criteria, it should be considered Critically Endangered (CR B1a+2a; C2a[ii]) (IUCN, 2001).

**Discussion.** *Adiantum meishanianum* is similar to *A. caudatum* by the prolonged rachis bearing adventitious buds, but the two species differ by the sessile pinnae and dense indument on the rachis and



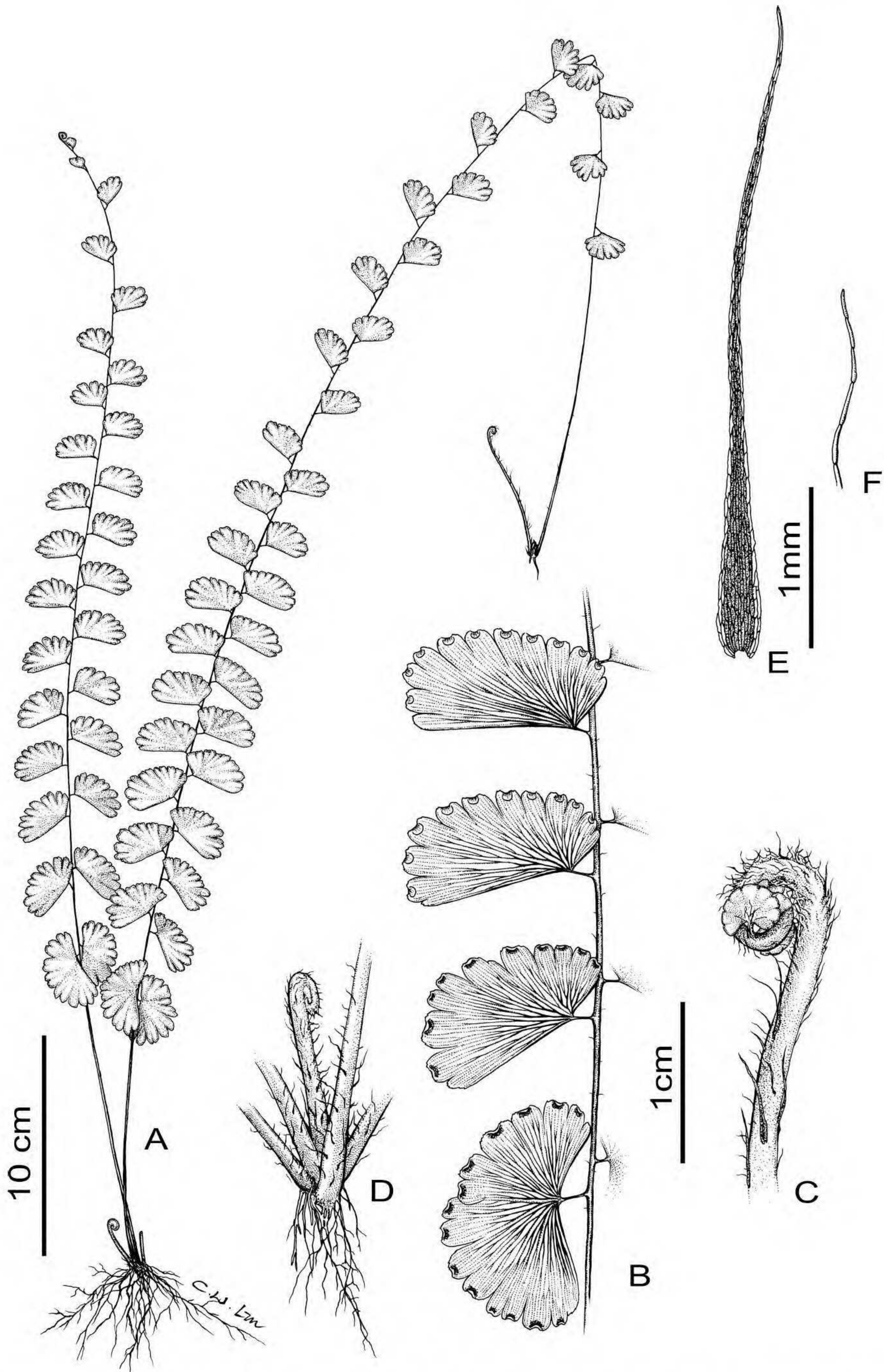


Figure 1. *Adiantum meishanianum* F. S. Hsu ex Y. C. Liu & W. L. Chiou. —A. Habit. —B. Proximal portion of the lamina, abaxial view. —C. Fiddlehead. —D. Stipe bases. —E. Rhizome scale. —F. Multicellular hair. Drawn from the holotype *B. J. Wang 3025* (HAST).

pinnae in *A. caudatum*. The new species is also similar to *A. philippense* L., recognized as a valid name prior to *A. lunulatum* Burman f. (Fraser-Jenkins & Verma, 2008), in the shape of the pinnae and in the

pinnae being stalked, but differs by the sparsely hairy or glabrate rachis and by the shorter stalks of the pinnae (3–5 mm vs. 10–15 mm in *A. philippense*). Both *A. caudatum* and *A. philippense* are broadly



distributed in tropical and subtropical Asia. In Taiwan, they frequently occur in the low-elevation hills of southern Taiwan and have been found in the vicinity of the *A. meishanianum* population.

Bi-Jao Wang (1953–1992) made the first collection of this species. After his death, most of his specimens were deposited in the Herbarium of the Research Center for Biodiversity, Academia Sinica, Taipei (HAST), and the Herbarium of the Taiwan Forestry Research Institute, Taipei (TAIF). In memory of his contribution, we choose as holotype the specimen collected by him and named by C. M. Kuo on the specimen sheet.

*Paratypes.* TAIWAN. **Kaohsiung:** Meishan Village, 17 Mar. 2007, *Y. C. Liu, Y. M. Huang & W. L. Chiou* 5006 (SYSU, TAIF), 3 Oct. 1992, *F. S. Hsu* 2114 (HAST).

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